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**Keiser et al.**

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(54) **COMPUTER-IMPLEMENTED SECURITIES TRADING SYSTEM WITH A VIRTUAL SPECIALIST FUNCTION**

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(21) Appl. No.: **09/184,571**

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## Related U.S. Application Data

(63) Continuation-in-part of application No. 08/620,906, filed on Mar. 25, 1996, now Pat. No. 5,950,176.

(51) Int. Cl.<sup>7</sup> ..... **G06F 17/60**

(52) U.S. Cl. .... **705/37; 705/35; 705/36; 705/1**

(58) Field of Search ..... **705/37, 36, 35, 705/1**

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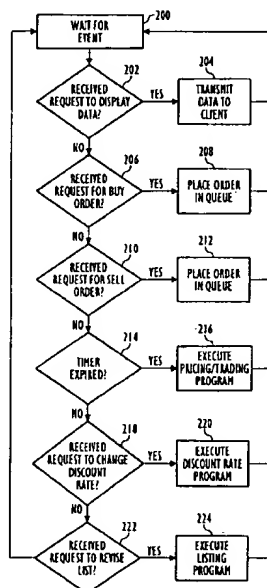
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### (57) ABSTRACT

The present invention discloses method, apparatus, and article of manufacture for a computer-implemented financial management system that permits the trading of securities via a network. A server computer receives buy and sell orders for derivative financial instruments from a plurality of client computers. The server computer matches the buy orders to the sell orders and then generates a market price through the use of a virtual specialist program executed by the server computer. The virtual specialist program responds to an imbalance in the matching of the buy and sell orders.

**25 Claims, 17 Drawing Sheets**



US-PAT-NO: 6505174

DOCUMENT-IDENTIFIER: US 6505174 B1

TITLE: Computer-implemented securities trading system with a virtual specialist function

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Brief Summary Text - BSTX (26):

The user may trade security instruments by typing in the symbol for the instrument for which a purchase is desired in a buy-sell area of the page. A quantity is also specified in the buy sell area. If the user does not know the symbol for a particular instrument, a lookup or search function is provided in another area of the screen using standard graphical user interface (GUI) features such as drop-down list boxes, text search boxes, or slider bar lists. Alternatively, a ticker tape style updating menu at the bottom of the screen displays available instruments with the corresponding instrument prices.

Brief Summary Text - BSTX (34):

After the above calculations are made, the SP is stored in a security price table 2006, which keeps track of all security prices. The NMB is updated in the net movement balance database. Each record of the net movement balance database further contains an increment tracking field for keeping track of the number of consecutive increments for the security instrument, up or down. Also, a price history tracking table 2010 is updated after each trade, performing a write SQL statement which adds a record comprising the SP, NMB, userID, and other information relating to the trade. This information is used by a marketing tool, explained below, which provides statistical information to market researchers.

Detailed Description Text - DETX (51):

With reference to FIG. 7, included within the system are a plurality of tables, including a global constant table 2022, development stage table 2024, price history table, 2020, net price movement table, 2008, security price table 2006, security constant table 2002, trade history tracking table 2010, net price movement balance table, 2012, ghost trading table 2014, administration

table, 2016, and a user database table 2026, which are used as explained below.

Interfacing with these tables are the virtual specialist program, 2028, which passes economic and price control data between all of the tables, a reserve bank program, 2030, which passes economic control data between all of the tables, and the user interface, 700, which passes trade and portfolio information between itself and the user database as explained below. Also interfacing with all tables is a marketing tool, 2040, as described below.

#### Detailed Description Text - DETX (62):

The user may trade security instruments by typing in the symbol 1012 for the instrument for which a purchase is desired in a buy-sell area of page 1010. A quantity 1014 is also specified in buy sell area 1010. If the user does not know the symbol for a particular instrument, a lookup or search function is provided in a symbol search area 1016 of the screen using standard graphical user interface (GUI) features such as drop-down list boxes, text search boxes, or slider bar lists. Alternatively, a ticker tape style updating menu 1018 at the bottom of the screen displays available instruments with the corresponding instrument prices.

#### Detailed Description Text - DETX (92):

After the above calculations are made, the SP is stored in a security price table 2006, step 1326, which keeps track of all security prices. If the price of the security changed, a price history tracking table 2020 is updated, performing a write SQL statement which adds a record comprising the SP, NMB, UserID, and other information relating to the trade, step 1328. The NMB is updated in the net movement balance table 2008 for the security that was the subject of the trade order, step 1330. Each record of the net movement balance database further contains an increment tracking field for keeping track of the number of consecutive increments for the security instrument, up or down. Aside from the virtual specialist program, the stored information is used by a marketing tool, explained below, which provides statistical information to market researchers.

#### Detailed Description Text - DETX (112):

With regard to buy vs. sell volume information, if the volume for a security is predominantly buy-side volume, or volume generated by traders buying the security, it is generally due to a positive awareness. A predominantly sell-side volume for a security indicates that traders believe the security to be overvalued. When the market research user directs the system to obtain buy vs. sell volume information, the market research tool

performs a query on the trade history tracking table 2010 and the **price history** tracking table 2020 described with respect to the virtual specialist program above. The query creates a temporary buy-sell volume answer table for all securities requested. The buy-sell volume answer table contains, for each security, overall buy volume figures, overall sell volume figures, yearly buy volume figures, yearly sell volume figures, monthly buy volume figures, monthly sell volume figures, daily buy volume figures, and daily sell volume figures.

Detailed Description Text - DETX (116):

With regard to price information, security prices are tied to perceived sales performance for the product or person which the security is tied to. For example, movie stock prices are tied to perceived box office performance. If a movie stock is priced at \$30, and a trader thinks that the movie will gross more than \$30 million at the box office, the trader will most probably buy the movie stock. Thus, the system of the present invention has the ability to find out what films, actors, phonorecordings or products consumers perceive will be successful. When the market research user directs the system to obtain price information, the market research tool performs a query on the **price history** tracking table 2020, described with respect to the virtual specialist program above, to retrieve price per share for all requested securities held by traders. The query creates a temporary price answer table for all securities requested. The price answer table contains, for each security, the price for each requested security.

Detailed Description Text - DETX (119):

With regard to index performance information, by aggregating market information into indices, insights can be drawn about the market as a whole. For example, a movie studio security index can be generated by calculating the sum of a studio's ten highest priced movie stocks over time. The performance of such an index tends to measure the potential strength of a studio's distribution, or the potential box office potential of the studio's upcoming films. When the market research user directs the system to obtain index performance information, the market research tool performs a query on the **price history** tracking table table 2020 to retrieve price change figures for the securities in all requested indices. The query creates a temporary index performance answer table for all securities requested. The index performance answer table contains, for each requested index, price change over time figures.